

PATENT SPECIFICATION

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(54) FATTY COMPOSITIONS FOR THE MANUFACTURE OF COSMETIC PRODUCTS

(71) We, L'OREAL, a French Body Corporate, of 14 Rue Royale, Paris, 8e, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a new fatty composition suitable for the manufacture of cosmetic products and especially make-up products. The present invention also relates to the cosmetic compositions in which the said fatty composition is present.

As is well known, make-up products of the type of lip rouge in stick or paste form or mascara consist mainly of a fatty base which is a mixture of one or more waxes and one or more oils.

The oils and waxes which can be used for the manufacture of such make-up products are very varied, and their choice depends primarily on the intended use of the products.

Hitherto, the use of certain waxes or oils of animal, vegetable or mineral origin, or of certain synthetic substances which have properties similar to those of the natural substances and which can consequently advantageously replace them, has been exclusively recommended.

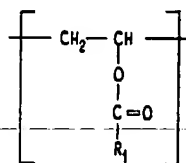
Although commonly used in cosmetics, these waxes and these oils, whether they be of natural or synthetic origin, do not make it possible to impart to lip rouges in stick or paste form and to mascaras properties which are wholly satisfactory, especially in relation firstly to the strength of the sticks and secondly to the gloss of the film deposited on the lips or on the eyelashes and to the better adhesion of this film and to the way in which it lasts.

In fact, it is important firstly that lip rouges in stick form should be sufficiently strong so that, during application, the stick does not

break or fracture, and secondly that lip rouges in paste form and mascaras should adhere well whilst being sufficiently glossy.

After extensive investigations, we have now found, surprisingly, that it is possible to manufacture make-up products and especially lip rouges in stick or paste form and mascaras which possess the various properties mentioned above, if a composition containing a mixture of at least one cosmetic fatty constituent and at least one copolymer of a particular type which has great affinity for the fatty constituent and which is non-toxic is used as the fatty base.

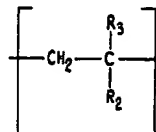
The present invention thus provides a fatty composition suitable for the manufacture of cosmetic products, this composition comprising a mixture of at least one cosmetic fatty constituent (as hereinafter defined) and at least one non-toxic, optionally crosslinked, copolymer having recurring units of the following formulae:



1a

and

(I)



1b

in which:

R₁ represents a linear or branched saturated hydrocarbon radical with up to 19 carbon atoms;

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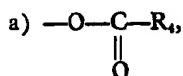
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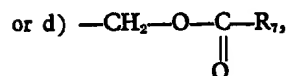
R_2 represents



wherein R_4 is as defined under R_1 , but is different from R_1 ,

5 b) $\text{—CH}_2\text{—R}_5$, wherein R_5 represents a linear or branched saturated hydrocarbon radical with 5 to 25 carbon atoms,

c) —O—R_6 , wherein R_6 represents a saturated hydrocarbon radical with 2 to 18 carbon atoms,



wherein R_7 represents a linear or branched saturated hydrocarbon radical with up to 19 carbon atoms;

15 and R_3 represents a hydrogen atom when R_2 is as defined under a), b) or c) or R_3 represents a hydrogen atom or a methyl radical when R_2 represents a radical as defined under d), with the proviso that at least 15% by weight of the copolymer consists of a monomer of formula Ia or Ib which contains a linear or branched saturated hydrocarbon radical of at least 7 carbon atoms.

20 According to the invention, by "fatty constituent" there is to be understood a wax or a mixture of waxes or a mixture of at least one wax and at least one oil. Preferably, the "fatty constituent" according to the invention consists of 6 to 100% by weight of at least one wax and 0 to 94% by weight of at least one oil.

25 The presence in the fatty composition of at least one copolymer as defined above makes it possible to impart great resistance to breaking to the make-up products in stick form, and ensures that the film deposited on the lips, for example, possesses excellent gloss and lasts very well.

30 In the case of the compositions in paste form, and especially lip rouges or lip glosses, the presence of at least one copolymer makes it possible to impart a very unctuous and very supple consistency to these compositions and to ensure that the film deposited on the lips possesses an excellent gloss and adheres well and that the gloss of the film lasts for a longer period.

35 In the case of the compositions in the form of mascaras, the presence of a copolymer also improves the adhesion of the film and increases the water resistance of the film deposited on the eyelashes.

40 All the copolymers described above possess the characteristic of being fat-soluble, that is to say they have a great affinity for the waxes and oils with which they are mixed. It is this very important property which makes it pos-

sible to impart excellent qualities to the cosmetic compositions manufactured from the fatty composition according to the invention.

This fat-solubility of the copolymers is due to the presence of at least 15% by weight of at least one of the monomers containing a linear or branched saturated hydrocarbon radical of at least 7, and up to, for example, 25, carbon atoms.

According to the invention, the fatty constituent is preferably present in a proportion of from 65 to 98%, but preferably from 75 to 95%, and the copolymer is preferably present in a proportion of from 2 to 35%, but preferably from 5 to 25%, relative to the total weight of the fatty composition.

It is to be noted that, in the fatty composition according to the invention, the copolymer as defined above can be used either alone or mixed with another copolymer of the same type or mixed with a fat-soluble homopolymer.

Amongst the homopolymers of this type, there may be mentioned in particular those resulting from the homopolymerisation of vinyl esters with 9 to 22 carbon atoms or alkyl acrylates or methacrylates, the alkyl radicals having 10 to 20 carbon atoms.

Preferably, the homopolymer is polyvinyl stearate, polyvinyl stearate crosslinked with divinylbenzene, diallyl ether or diallyl phthalate, polystearyl methacrylate, polyvinyl laurate, polylauryl methacrylate, polystearyl acrylate or polylauryl acrylate, it being possible for these polyacrylates and polymethacrylates to be crosslinked with ethylene glycol dimethacrylate or tetraethylene glycol dimethacrylate.

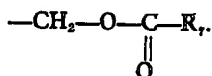
As stated above, the fatty constituent can consist of one or more waxes and in this case the latter can be, for example, ozokerite, lanolin, lanolin alcohol, hydrogenated lanolin, acetylated lanolin, lanolin wax, beeswax, Candelilla wax, microcrystalline wax, Carnauba wax, cetyl alcohol, stearyl alcohol, spermaceti, cacao butter, lanolin fatty acids, petrolatum, vaselines, ("VASELINE" is a Registered Trade Mark), mono-, di- and tri-glycerides which are solid at 25°C, fatty esters which are solid at 25°C, silicone waxes such as methyl-octadecanoxypolysiloxane and -poly(dimethyl-siloxy)-stearoxysiloxane, stearyl monoethanolamide, colophony and its derivatives such as glycol abietates and glycerol abietates, hydrogenated oils which are solid at 25°C, sucroglycerides, and Ca, Mg, Zr and Al oleates, myristates, lanolates, stearates and dihydroxystearates.

The fatty constituent can also consist of a mixture of at least one wax and at least one oil, and in this case the oil can be, for example, paraffin oil, Purcellin oil, perhydrosqualene, sweet almond oil, avocado oil, calophyllum oil, castor oil, caballine oil, lard oil, olive oil, mineral oils with a boiling point of 310 to

410°C, silicone oils such as dimethylpoly-siloxanes, linoleyl alcohol, linolenyl alcohol, oleyl alcohol, cereal germ oil such as wheat-germ oil, isopropyl lanolate, isopropyl palmitate, isopropyl myristate, butyl myristate, cetyl myristate, hexadecyl stearate, butyl stearate, decyl oleate, acetyl-glycerides, octanoates and decanoates of alcohols and polyalcohols like those of glycol and glycerol, ricinoleates of alcohols and polyalcohols such as cetyl ricinoleate, isostearyl alcohol, isocetyl lanolate, isopropyl adipate, hexyl laurate and octyldodecanol.

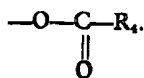
As formula I shows, the copolymers present in the fatty composition result from the copolymerisation of at least one vinyl ester and at least one other monomer which can be derived from particular α -olefines, alkyl vinyl ethers or allyl or methallyl esters.

Since the particular α -olefines, alkyl vinyl ethers and allyl or methallyl esters from which the monomer of formula Ib may be derived are not homopolymerisable monomers, in contrast to vinyl esters, it follows that the copolymers which result from the copolymerisation of at least one vinyl ester and at least one of the specified non-homopolymerisable monomers, generally consist of 50 to 95 mol % of at least one unit Ia and 50 to 5 mol % of at least one unit Ib in which R_2 represents the radicals $-\text{CH}_2-\text{R}_3$, $-\text{O}-\text{R}_4$ or

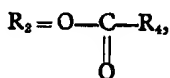


The copolymers can also result from the copolymerisation of at least one vinyl ester and at least one other vinyl ester which is different from the first.

In this case, as indicated above, the vinyl esters are homopolymerisable and the copolymers of this type generally consist of 10 to 90 mol % of at least one unit Ia and 90 to 10 mol % of at least one unit Ib in which R_2 represents the radical



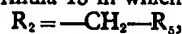
Amongst the vinyl esters which lead to the unit of the formula Ia or to the unit of the formula Ib in which



there may be mentioned vinyl acetate, vinyl propionate, vinyl butanoate, vinyl octanoate, vinyl decanoate, vinyl laurate, vinyl stearate, vinyl isostearate, vinyl 2,2-dimethyl-octanoate, vinyl dimethylpropionate and vinyl esters of

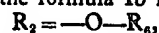
ceanoic acids, ceanoic acids being the trade name of a mixture of branched and linear fatty acids having the same number of carbon atoms, which can be either 8, 9 or 10.

Amongst the α -olefines which lead to the unit of the formula Ib in which



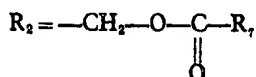
there may be mentioned 1-octene, 1-dodecene, 1-octadecene, 1-eicosene and mixtures of α -olefines with 22 to 28 carbon atoms.

Amongst the alkyl vinyl ethers which lead to the unit of the formula Ib in which



there may be mentioned ethyl vinyl ether, n-butyl vinyl ether, isobutyl vinyl ether, decyl vinyl ether, dodecyl vinyl ether, cetyl vinyl ether and octadecyl vinyl ether.

Amongst the allyl or methallyl esters which lead to the unit of the formula Ib in which



there may be mentioned allyl and methallyl acetates, propionates, dimethylpropionates, butyrates, hexanoates, octanoates, decanoates, laurates, 2,2-dimethyl-pentanoates, stearates and eicosanoates.

The copolymers can also be crosslinked with certain types of crosslinking agents, the purpose of which is substantially to increase their molecular weight.

This crosslinking is suitably carried out during the copolymerisation and the crosslinking agents can be either of the vinyl type or of the allyl or methallyl type.

Amongst the latter, there may be mentioned in particular tetraallyloxyethane, divinylbenzene, divinyl octanedioate, divinyl dodecanedioate and divinyl octadecanedioate.

The majority of the copolymers used according to the present invention are known and have a molecular weight of from 2,000 to 500,000, and preferably from 4,000 to 200,000.

Amongst the various copolymers which can be used in the fatty composition according to the invention, the following copolymers may be mentioned: vinyl acetate/allyl stearate, vinyl acetate/vinyl laurate, vinyl acetate/vinyl stearate, vinyl acetate/octadecene, vinyl acetate/octadecyl vinyl ether, vinyl propionate/allyl laurate, vinyl propionate/vinyl laurate, vinyl stearate/1-octadecene, vinyl acetate/1-dodecene, vinyl stearate/ethyl vinyl ether, vinyl propionate/cetyl vinyl ether, vinyl stearate/allyl acetate, vinyl 2,2-dimethyloctanoate/vinyl laurate, allyl 2,2-dimethyl-pentanoate/vinyl laurate, vinyl dimethyl-propionate/vinyl stearate, allyl dimethyl-propionate/vinyl stearate, vinyl propionate/vinyl stearate cross-linked with 0.2% of divinylbenzene, vinyl dimethyl-propionate/vinyl laurate crosslinked

with 0.2% of divinylbenzene, vinyl acetate/octadecyl vinyl ether crosslinked with 0.2% of tetraallyloxyethane, vinyl acetate/allyl stearate crosslinked with 0.2% of divinylbenzene, vinyl acetate/1-octadecene crosslinked with 0.2% of divinylbenzene and allyl propionate/allyl stearate crosslinked with 0.2% of divinylbenzene.

The copolymers which can be used according to the invention, whether or not they are crosslinked, can be prepared in accordance with conventional methods, that is to say by polymerisation in bulk, in suspension, in solution or in emulsion.

The polymerisation is preferably carried out in solution in an organic solvent or in suspension in water.

As the catalyst, it is possible to use, for example, benzoyl peroxide, lauroyl peroxide or azo-bisisobutyronitrile.

The polymerisation temperature is generally from 50° to 130°C.

The present invention also relates to the solid or semi-solid cosmetic compositions which contain, as the fatty composition, the composition as defined above.

According to the invention, the proportion of fatty composition in the cosmetic compositions is preferably from 99.5% to 15% by weight relative to the total weight of the cosmetic composition, the copolymer being present in an amount of at least 1.5% by weight, based on the total weight of the cosmetic composition.

These compositions according to the invention can be either in the form of lip rouges in stick or paste form, or in the form of mascaras.

When the compositions according to the invention are in the form of sticks, they can be either lip rouges or lip glosses. The difference between these two embodiments resides in the fact that lip glosses do not contain, or contain only a very small proportion of, dyestuffs which serve solely to dye the stick but do not allow a colouration to be imparted to the lips.

In this particular embodiment, the fatty composition according to the invention is preferably present in a proportion of from 75 to 99.5% relative to the total weight of the stick.

The various ingredients which can be introduced into these sticks are those conventionally employed for this type of formulation. Amongst these ingredients, there may be mentioned in particular soluble or insoluble dyestuffs which are generally present in a proportion of from 6 to 15%, solvents for certain dyestuffs which are insoluble in the fatty constituents and especially eosin derivatives, agents for imparting a pearly lustre, in a proportion of 2 to 20%, perfumes, anti-sunburn agents, anti-oxidants and preservatives.

Amongst the various dyestuffs for lip rouges, there may be mentioned in

particular eosins and other halogenated derivatives of fluorescein (bromo-acids) and especially those known by the names of D and C Red No. 21, D and C Red No. 27 and D and C Orange No. 5, inorganic pigments such as iron oxide and chromium oxide, ultramarines (poly-aminosilicate sulphides) and titanium dioxide, these compounds being employed at a concentration of about 1 to 6%, and organic pigments such as D and C Red No. 36 and D and C Orange No. 17.

Finally, lacquers such as calcium lacquers of D and C Red No. 7, 21 and 27, barium lacquers of D and C Red No. 6 and 9, Al lacquers of D and C Red No. 21 and D and C Yellow No. 5 and 6, and zirconium lacquers of D and C Red No. 21 and D and C Orange No. 5 may also be included in the dyestuffs.

Amongst the solvents for dyestuffs which are insoluble in oils, there may be mentioned glycols, tetrahydrofurfuryl esters, polyethylene glycols and monoalkanolamides.

Amongst the agents for imparting a pearly lustre, there may be mentioned in particular bismuth oxychloride, titanium-mica and guanine crystals.

Amongst the anti-oxidants, there may be mentioned in particular those of the phenolic type such as propyl, octyl and dodecyl esters of gallic acid, butylated hydroxy-anisole, butylated hydroxy-toluene and nordihydroguaiaretic acid.

When the compositions are in the form of pastes, they can also be lip rouges or lip glosses and thus contain the same ingredients as the sticks. In this embodiment, the fatty composition is also present in a proportion identical to that of the sticks.

However, in a paste the proportion of wax is lower and it is preferably recommended not to exceed 85% of wax relative to the total weight of the fatty composition.

These compositions are preferably anhydrous, whether they are in the form of sticks or pastes, but in certain cases they can contain some amounts of water generally not exceeding 8 to 10% relative to the total weight of the cosmetic composition.

When the cosmetic compositions according to the invention are in the form of mascaras, the latter are in a semi-solid form and can be either anhydrous or aqueous.

In this particular embodiment, the proportion of fatty composition according to the invention is preferably from 15 to 40% relative to the total weight of the mascara.

When the mascaras are anhydrous, they contain, in addition to the fatty composition, a volatile product (i.e. a product which will evaporate sooner than the other constituents), in a proportion generally from 35 to 50% relative to the total weight of the mascara. Amongst the volatile compounds, there may

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be mentioned in particular isoparaffin oil of turpentine, isopropyl alcohol, ethyl alcohol, and white spirit.

On the other hand, when the mascaras are aqueous (in this case they are then more particularly emulsions of the oil-in-water type) they preferably contain 50 to 70% by weight of water relative to the total weight of the mascara, 8 to 20% of an emulsifier such as aminopropanediol oleostearate, amino-propanediol stearate or oleate or oleostearate, morpholine stearate or oleate, mono-, di- or tri-ethanolamine stearate or oleate, mono-, di- or tri-isopropylamine stearate or oleate or oleostearate, polyoxyethyleneated or polyglycerolated fatty ethers or esters and the like, and a substance for improving the adhesion and the flow of the mascara, such as, for example, cellulose derivatives like hydroxy-cellulose or gum arabic.

Whether the mascaras are anhydrous or aqueous, they also contain dyestuffs and more particularly certain pigments such as carbon black or black iron oxide, chromium oxides, yellow and red iron oxides and finally certain metal powders such as those of silver or aluminium.

The mascaras according to the invention can also contain other conventional ingredients such as perfumes, anti-oxidants and preservatives.

As has been indicated above, whether the compositions are in the form of sticks, pastes or mascaras, they should preferably not contain an amount of copolymer less than 1.5% by weight relative to the total weight of these types of compositions.

As far as the upper concentration of copolymer in the cosmetic compositions is concerned, it is a function of the ratios of the fatty composition and can be approximately 35% and preferably approximately 25% in the case of sticks and pastes, and approximately 15% and preferably approximately 10% in the case of mascaras.

Examples of the preparation of copolymers and of fatty compositions and cosmetic compositions according to the invention will now be given by way of illustration.

50 EXAMPLES OF THE PREPARATION OF COPOLYMERS.

Preparation of a copolymer: 60% of vinyl acetate/40% of allyl stearate

55 **EXAMPLE 1.**
(Molar ratio: vinyl acetate, 85%/allyl stearate, 15%).

60 g of vinyl acetate, 40 g of allyl stearate and 3.4 g of benzoyl peroxide dissolved in 100 g of toluene are introduced into a 1 litre

flask equipped with a mechanical stirrer, a nitrogen inlet and a condenser. The solution is heated, with stirring, for 18 hours at 100°C. After distilling 75 g of toluene under reduced pressure, 120 g of methanol, heated beforehand to 50°C, are introduced. The methanol/vinyl acetate azeotrope (boiling point = 63.8°C) is distilled until approximately 100 g of the mixture have been recovered and then a further 120 g of methanol, heated to 50°C, are introduced and approximately 120 g of the mixture are again distilled. 500 g of methanol are then added and the mixture is heated, with stirring, for 10 minutes at the boiling point of methanol. The polymer dissolves but the solution remains cloudy. The solution is allowed to cool to 20°C, with stirring, and the polymer precipitates in the form of a paste. The supernatant methanol is removed and the polymer is reprecipitated from methanol. After removing the methanol, 400 g of ethanol are introduced and the mixture is heated, with stirring, for 10 minutes at the boiling point of ethanol and is allowed to cool to 20°C, with stirring. After removing the ethanol containing the unreacted allyl stearate, reprecipitation is effected a final time from methanol. The precipitated polymer is isolated and dried under reduced pressure, without heating.

Yield: 40%
Mn = 10,000

Viscosity = 0.83 cp

Preparation of a copolymer: 35% of vinyl acetate/65% of allyl stearate

EXAMPLE 2.

(Molar ratio: vinyl acetate, 67%/allyl stearate, 33%).

35 g of vinyl acetate, 65 g of allyl stearate and 3.4 g of benzoyl peroxide dissolved in 100 g of benzene are introduced into a 500 ml flask equipped with a condenser, a nitrogen inlet and a stirrer. The solution is heated under reflux, with stirring, for 19 hours, then 3.4 g of benzoyl peroxide dissolved in 10 g of benzene are introduced and polymerisation is continued for a further 14 hours. Finally, 1.7 g of benzoyl peroxide dissolved in 5 g of benzene are introduced and polymerisation is continued for 9 hours. The solution is allowed to cool and is poured into 2 litres of methanol. The polymer precipitates in the form of a white powder which is dried at 50°C under reduced pressure.

Yield: 96%

Viscosity = 1.10 cps.

EXAMPLES 3 to 23.

By following a similar procedure, other copolymers were prepared. The latter are given in Table A.

Preparation Examples—TABLE A

Example	Copolymer prepared	mol %	% by weight	Solvent	Nature and % of the catalyst	Precipitating agent (b)	Viscosity (cp) (a)
3	Vinyl acetate	53	30	Isopropanol	AIBN 2% (c)	Methanol	0.81
	Vinyl laurate	47	70				
4	Vinyl acetate	70	40	Methanol	AIBN 1%	Methanol	1.95
	Vinyl stearate	30	60				
5	Vinyl propionate	43	25	Isopropanol	AIBN 3%	Methanol	0.74
	Vinyl laurate	57	75				
6	Vinyl stearate	77	80	Isopropanol	AIBN 3%	Octane	0.70
	1-Octadecene	23	20				
7	Vinyl acetate	66	50	Isopropanol	AIBN 2%	Evaporation to dryness	0.70
	Dodecene	34	50				
8	Vinyl acetate	81	60	Isopropanol	AIBN 2%	Water	0.76
	1-Octadecene	19	40				
9	Vinyl stearate	50	80	Methanol	AIBN 3%	Evaporation to dryness	1.10
	Ethyl vinyl ether	50	20				
10	Vinyl propionate	94	85	Isopropanol	AIBN 2%	Water	0.79
	Cetyl vinyl ether	6	15				
11	Vinyl acetate	77	50	Isopropanol	AIBN 3%	Water	0.70
	Octadecyl vinyl ether	23	50				
12	Vinyl propionate	90	80	Methanol	AIBN 3%	Water	1.11
	Allyl laurate	10	20				

TABLE A (Continued)

Example	Copolymer prepared	mol %	% by weight	Solvent	Nature and % of the catalyst	Precipitating agent (b)	Viscosity (cp) (a)
13	Vinyl stearate	53	80	Methanol	AIBN 4%	Methanol	0.89
	Allyl acetate	47	20				
14	Vinyl 2,2-dimethyl-octanoate	72	70	Methanol	AIBN 4%	Methanol	1.01
	Vinyl laurate	28	30				
15	Allyl 2,2-dimethyl-pentanoate	25	20	Methanol	AIBN 3%	Methanol	0.69
	Vinyl laurate	75	80				
16	Vinyl dimethylpropionate	38	20	Methanol	AIBN 1%	Methanol	1.27
	Vinyl stearate	62	80				
17	Allyl dimethylpropanoate	48	30	Methanol	AIBN 4%	Methanol	0.70
	Vinyl stearate	52	70				
18	Vinyl propionate	57	30	Acetone	AIBN 3%	Evaporation to dryness	0.97
	Vinyl stearate cross-linked with 0.2% of divinylbenzene	43	70				
19	Vinyl dimethylpropanoate	24	15	Isopropanol	AIBN 2%	Methanol	0.76
	Vinyl laurate cross-linked with 0.2% of divinylbenzene	76	85				
20	Vinyl acetate	77	50	Benzene	AIBN 3%	Ethanol	0.61
	Octadecyl vinyl ether crosslinked with 0.2% of tetraallyloxyethane	23	50				

TABLE A (Continued)

Example	Copolymer prepared	mol %	% by weight	Solvent	Nature and % of the catalyst	Precipitating agent (b)	Viscosity (cp) (a)
21	Vinyl acetate	62	30	Isopropanol	AIBN 2%	Methanol	0.68
	Allyl stearate crosslinked with 0.2% of divinylbenzene	38	70				
22	Vinyl acetate	75	50	Isopropanol	AIBN 2%	Evaporation to dryness	0.6
	1-octadecene crosslinked with 0.2% of divinylbenzene	25	50				
23	Allyl propionate	23	10	Acetone	AIBN 2%	Evaporation to dryness	0.74
	Vinyl stearate crosslinked with 0.2% of divinylbenzene	77	90				

Notes: All the copolymers of Examples 3 to 23 were prepared by heating in solution at 80°C for 24 hours.

(a): The viscosities were measured as a 5% strength solution in toluene at 34.6°C.

(b): After the end of the polymerisation, the mixture is poured into one of the solvents indicated in order to precipitate the copolymer.

(c): AIBN (azo-bis-isobutyronitrile).

EXAMPLES OF COMPOSITIONS ACCORDING TO THE INVENTION.

Preparations of lip rouges in stick form

EXAMPLE I.

A lip rouge in stick form having the following composition is prepared according to the invention:

Fatty composition A	89.9 g	10
Anti-oxidant (butylated hydroxy-toluene)	0.1 g	
Anti-sunburn agent (trimethylbenzylidene-heptanone)	1 g	
Perfume	1 g	
Dyestuffs:		15
Titanium oxide	4.5 g	
D and C Red No. 36	1 g	

Al lacquer of F.D.C. Yellow 6 1 g
Al lacquer of D and C Red No. 27 1.5 g

The fatty composition A results from mixing the following ingredients:

5 Ozokerite 16 g
Lanolin 28 g
Oleyl alcohol 10 g
Cetyl ricinoleate 20 g
Octanoate acid triglycerides 20 g
10 Wheatgerm oil 1 g
Copolymer according to Example 1 5 g

EXAMPLE II.

A pearly lip rouge in stick form having the following composition is prepared according to the invention:

15 Fatty composition B 79.9 g
Anti-oxidant (butylated hydroxy-toluene) 0.1 g
Anti-sunburn agent (trimethylbenzylidene-heptanone) 1 g
20 Dyestuffs:
Titanium oxide 1 g
Al lacquer of D and C Red No. 27 1.5 g
Black iron oxide 1 g
25 Yellow iron oxide 0.5 g
Mico-titanium 15 g

The fatty composition B results from mixing the following ingredients:

30 Candellila wax 9 g
Microcrystalline wax 4 g
Mineral oil 13 g
Cetyl ricinoleate 15 g
Lanolin 15 g
Liquid lanolin 25 g
35 Isopropyl lanolin 14 g
Copolymer according to Example 3 5 g

EXAMPLE III.

A transparent lip gloss in stick form having the following composition is prepared according to the invention:

40 Fatty composition C 96.9 g
Anti-oxidant (butylated hydroxy-anisole) 0.1 g
Perfume 1 g
45 Dyestuffs:
Zr lacquer of D and C Red No. 21 0.5 g
D and C Red No. 36 1 g
Al lacquer of F.D.C. Yellow No. 5 0.5 g

The fatty composition C results from mixing the following ingredients:

50 Ozokerite 12.5 g
Carnauba wax 2 g
Candellila wax 2 g
Hydrogenated lanolin 5 g

Castor oil 38.5 g
Oleyl alcohol 15 g
Isopropyl lanolate 10 g
Liquid lanolin 5 g
Copolymer according to Example 1 10 g

EXAMPLE IV.

A lip rouge in stick form having the following composition is prepared according to the invention:

Fatty composition D 89.9 g
65 Anti-oxidant (butylated hydroxy-toluene) 0.1 g
Anti-sunburn agent (trimethylbenzylidene-heptanone) 1 g
Perfume 1 g
70 Dyestuffs:
Titanium oxide 4.5 g
D and C Red No. 36 1 g
Al lacquer of F.D.C. Yellow 6 1 g
Al lacquer of D and C Red No. 27 1.5 g

The fatty composition D is identical to the composition C with the exception of the 10 g of the copolymer which are replaced by a mixture of:

Copolymer according to Example 2 6 g
Polyvinyl stearate 4 g 80

EXAMPLE V.

A lip rouge in stick form having the following composition is prepared according to the invention:

Fatty composition E 89.8 g 85
Anti-oxidant (butylated hydroxy-toluene) 0.1 g
Anti-sunburn agent (trimethylbenzylidene-heptanone) 1 g
Perfume 1 g 90
Dyestuffs:
Titanium oxide 2.2 g
Al lacquer of D and C Red No. 27 3.6 g
Black iron oxide 0.4 g
D and C Red No. 36 0.9 g 95
Al lacquer of D and C Yellow No. 6 1 g

The fatty composition E results from mixing the following ingredients:

Microcrystalline wax 9 g
Lanolin 30 g 100
Oleyl alcohol 9 g
Cetyl ricinoleate 20 g
Octanoic acid triglycerides 16 g
Isopropyl lanolate 10 g
Wheatgerm oil 1 g 105
Copolymer according to Example 4 5 g

In this fatty composition E, the copolymer according to Example 4 can advantageously be replaced by the same amount of one of the copolymers prepared according to Examples 5, 6, 7 or 9. 110

EXAMPLE VI.

A lip rouge in stick form having the following composition is prepared according to the invention:

5	Fatty composition E'	82.5 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
	Perfume	1 g
	Titanium oxide	1.8 g
10	D and C Orange No. 5	0.3 g
	Al lacquer of D and C Yellow No. 6	8.8 g
	D and C Red No. 6	5.5 g

The fatty composition E' is identical to the fatty composition E with the exception of the fact that the 5 g of copolymer according to Example 4 was replaced by the same amount of copolymer according to Example 10.

EXAMPLE VII.

A pearly lip rouge in stick form having the following composition is prepared according to the invention:

	Composition E''	78.85 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
25	Perfume	1 g
	Zirconium lacquer of D and C Red No. 21	0.8 g
	Black iron oxide	0.05 g
	D and C Orange No. 5	0.2 g
30	D and C Red No. 36	0.8 g
	Lacquer of D and C Yellow No. 6	3.2 g
	Mica-titanium	15 g

The fatty composition E'' is identical to the fatty composition E with the exception of the fact that the 5 g of copolymer according to Example 4 were replaced by the same amount of a copolymer according to Example 11.

EXAMPLE VIII.

A lip rouge in stick form having the following composition is prepared according to the invention:

	Fatty composition F	89.62 g
45	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
	Perfume	1 g
	D and C Red No. 30	5 g
	Calcium lacquer of D and C (sic) No. 7	0.8 g
50	D and C Red No. 36	0.5 g
	Titanium oxide	2.6 g
	Black iron oxide	0.38 g

The fatty composition F results from mixing the following ingredients:

55	Ozokerite	13 g
	Liquid lanolin	8 g
	Oleyl alcohol	15 g

	Carnauba wax	3 g	
	Castor oil	44 g	
	Isopropyl lanolin	12 g	60
	Copolymer according to Example 20	5 g	

Lip gloss in paste form.

EXAMPLE IX.

A lip gloss in paste form having the following composition is prepared according to the invention:

	Fatty composition G	97.9 g	
	Anti-oxidant	0.1 g	
	Perfume	1 g	
	Dyestuffs:		70
	Titanium oxide	0.2 g	
	Zr lacquer of D and C Red No. 21	0.3 g	
	Al lacquer of F.D.C. Yellow No. 6	0.2 g	
	D and C Red No. 36	0.3 g	

The fatty composition G results from mixing the following ingredients:

	Lanolin	30 g	
	Liquid lanolin	30 g	
	Vaseline	10 g	
	Mineral oil	9 g	80
	Microcrystalline wax	1 g	
	Copolymer according to Example 17	20 g	

In this fatty composition G, the copolymer according to Example 17 can advantageously be replaced by a copolymer prepared according to Examples 19 and 22.

EXAMPLE X.

A pearly lip gloss in paste form having the following composition is prepared according to the invention:

	Fatty composition H	80.9 g	
	Anti-oxidant (butylated hydroxy-anisole)	0.1 g	
	Perfume	1 g	
	Dyestuffs:		95
	Al lacquer of D and C Red No. 27	0.5 g	
	D and C Red No. 36	0.5 g	
	Al lacquer of F.D.C. Yellow No. 5	0.5 g	
	Bi-oxychloride	16.5 g	

The fatty composition H results from mixing the following ingredients:

	Lanolin	30 g	
	Lanolin wax	4 g	
	Oleyl alcohol	13 g	
	Cetyl ricinoleate	10 g	105
	Mineral oil	3 g	
	Castor oil	20 g	
	Copolymer according to Example 13	20 g	

In this fatty composition H, the copolymer according to Example 13 can advantageously

be replaced by the same amount of a copolymer prepared according to Examples 12, 15 and 16.

EXAMPLE XI.

- 5 A lip gloss in paste form having the following composition is prepared according to the invention:

	Fatty composition I	97.04 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
10	Perfume	1 g
	Zirconium lacquer of D and C Red No. 21	0.4 g
	Calcium lacquer of D and C Red No. 7	0.12 g
15	Black iron oxide	0.14 g
	Al lacquer of D and C Yellow No. 6	1.2 g

The fatty composition I results from mixing the following ingredients:

20	Microcrystalline wax	1.5 g
	Ozokerite	2.5 g
	Lanolin	15 g
	Mineral lanolin	37 g
	Cationic bentonite	4 g
25	Copolymer according to Example 23	10 g

EXAMPLE XII.

A slightly pearly lip gloss in paste form having the following composition is prepared according to the invention:

30	Fatty composition J	93.95 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
	Perfume	1 g
	D and C Red No. 21	0.05 g
35	Zirconium lacquer of D and C Red No. 21	0.2 g
	Calcium lacquer of D and C Red No. 7	0.2 g
	Aluminium lacquer of D and C Yellow No. 6	0.5 g
40	Mica-titanium	4 g

The composition J results from mixing the following ingredients:

	Microcrystalline wax	2.5 g
45	Ozokerite	3 g
	Liquid lanolin	28 g
	Mineral oil	11 g
	Lanolin	23 g
	Solidified mineral oil	15 g
50	Cationic bentonite	7.5 g
	Copolymer according to Example 18	10 g

- 55 In this fatty composition, the copolymer according to Example 18 can advantageously be replaced by the same amount of a copolymer prepared according to Example 14, 20 or 21.

EXAMPLE XIII.

A lip gloss in paste form having the following composition is prepared according to the invention:

	Fatty composition K	97.570 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
	Perfume	1 g
	Black iron oxide	0.035 g
	D and C Red No. 6	0.37 g
	D and C Red No. 36	0.175 g
	Yellow iron oxide	0.75 g

The fatty composition K results from mixing the following ingredients:

	Microcrystalline wax	1.5 g
	Ozokerite	2 g
	Liquid lanolin	28 g
	Mineral oil	11 g
	Lanolin	20 g
	Solidified mineral oil	15 g
	Cationic bentonite	7.5 g
	Copolymer according to Example 17	15 g

In this fatty composition K, the copolymer according to Example 17 can be replaced by a mixture of copolymers prepared according to Examples 8 and 11 (10 g of the copolymer according to Example 8 and 5 g of the copolymer according to Example 11).

EXAMPLE XIV.

A lip rouge in paste form for an application device is prepared according to the invention; it has the following composition:

	Fatty composition L	85.9 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
	Cationic bentonite	5 g
	Perfume	1 g
	Dyestuffs:	
	Titanium oxide	1 g
	Al lacquer of D and C Red No. 27	3 g
	Ca lacquer of D and C Red No. 7	4 g

The fatty composition L results from mixing the following ingredients:

	Lanolin	18 g
	Isopropyl lanolin	18 g
	Mineral oil	4 g
	Oleyl alcohol	10 g
	Hydrogenated lanolin	8 g
	Cetyl ricinoleate	8 g
	Castor oil	18 g
	Copolymer according to Example 1	20 g

EXAMPLE XV.

A lip rouge in paste form having the following composition is prepared according to the invention:

	Fatty composition M	83.9 g	Demineralised water	58.8 g	
	Anti-oxidant (butylated hydroxy-anisole)	0.1 g	Black iron oxide	10 g	
	Perfume	1 g	Methyl para-hydroxy-benzoate	0.2 g	
5	Cationic bentonite	3 g	The fatty composition O results from mixing the following ingredients:		
	Dyestuffs:				60
	Titanium oxide	1 g			
	Al lacquer of D and C Red No. 27	3 g	Carnauba wax	99 g	
	D and C Red No. 30	3 g	Copolymer according to Example 1	11 g	
10	Ca lacquer of D and C Red No. 7	5 g			

The fatty composition M is identical to the composition G with the exception of the 20 g of copolymer which are replaced by a mixture of:

15	Copolymer according to Example 1	10 g
	Copolymer according to Example 6	5 g
	Polyvinyl stearate crosslinked with divinylbenzene	5 g

EXAMPLE XVI.

- 20 A lip rouge in paste form having the following composition is prepared according to the invention:

	Fatty composition N	76.9 g
	Anti-oxidant (butylated hydroxy-toluene)	0.1 g
25	Perfume	1 g
	Cationic bentonite	4 g
	Dyestuffs:	
	Ca lacquer of D and C Red No. 7	1.5 g
30	D and C Red No. 30	3 g
	Al lacquer of F.D.C. Red No. 5	1.5 g
	Mica-titanium	12 g

The fatty composition N results from mixing the following ingredients:

35	Microcrystalline wax	1 g
	Candellila wax	2 g
	Lanolin wax	5 g
	Castor oil	8 g
	Cetyl ricinoleate	8 g
40	Mineral oil	20 g
	Isopropyl lanolate	11 g
	Decanoic acid triglycerides	15 g
	Copolymer according to Example 21	30 g

- 45 In this fatty composition, the copolymer according to Example 21 can advantageously be replaced by the copolymer according to Example 23.

EXAMPLE XVII.

- 50 An automatic mascara of the "MASCARA MATIC" (Trade Mark) type having the following composition is prepared according to the invention:

	Fatty composition O	18 g
	Amino-propanediol oleostearate	12 g
55	Hydroxyethyl-cellulose	1 g

EXAMPLE XVIII.

- 65 An automatic mascara of the "MASCARA MATIC" type having the following composition is prepared according to the invention:

	Fatty composition P	18 g	
	Amino-propanediol oleostearate	12 g	
	Hydroxyethyl-cellulose	1 g	
	Demineralised water	58.8 g	70
	Yellow iron oxide	6 g	
	Black iron oxide	4 g	
	Methyl para-hydroxy-benzoate	0.2 g	

The fatty composition P results from mixing the following ingredients:

	Carnauba wax	89 g
	Copolymer according to Example 2	11 g

- 80 In this fatty composition, the copolymer according to Example 2 can advantageously be replaced by the same amount of a copolymer according to Examples 3, 5, 7, 8 and 18.

EXAMPLE XIX.

A mascara having the following composition is prepared according to the invention:

	Fatty composition Q	18 g	85
	Amino-propanediol oleostearate	12 g	
	Hydroxyethyl-cellulose	1 g	
	Demineralised water	58. g	
	Poly-amiosilicate sulphide	8 g	
	Black iron oxide	2 g	90
	Methyl para-hydroxy-benzoate	0.2 g	

The fatty composition Q results from mixing the following ingredients:

	Carnauba wax	89 g	
	Copolymer according to Example 12	11 g	95

- 100 In this fatty composition, the copolymer according to Example 12 can advantageously be replaced by the same amount of the copolymer prepared according to Examples 20, 21 and 23.

EXAMPLE XX.

An anhydrous mascara is prepared according to the invention by making up a mixture of the following ingredients:

	Fatty composition R	39 g	105
	Iso-paraffin	56.8 g	

Black iron oxide	4 g
Methyl para-hydroxy-benzoate	0.2 g

The fatty composition R results from mixing the following ingredients:

5 Beeswax	62.5 g
Lanolin alcohol	12.5 g
Acetylated lanolin	10 g
Copolymer according to Example 14	15 g

EXAMPLE XXI.

- 10 An anhydrous mascara is prepared according to the invention by making up a mixture of the following ingredients:

Fatty composition S	39 g
Iso-paraffin	56.8 g
15 Black iron oxide	4 g
Methyl para-hydroxy-benzoate	0.2 g

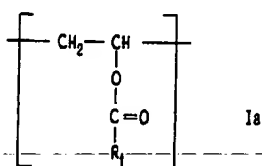
The fatty composition S results from mixing the following ingredients:

Beeswax	62.5 g
20 Lanolin alcohol	12.5 g
Acetylated lanolin	10 g
Copolymer according to Example 9	15 g

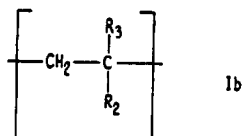
- 25 In this composition, the copolymer according to Example 9 can advantageously be replaced by an equal amount of the copolymer prepared according to Examples 5, 6, 7, 15 and 19 or a mixture of these copolymers.

WHAT WE CLAIM IS:—

- 30 1. A fatty composition suitable for the manufacture of cosmetic products, which comprises a mixture of at least one cosmetic fatty constituent (as hereinbefore defined) and at least one non-toxic, optionally crosslinked, copolymer having recurring units of the following formulae:



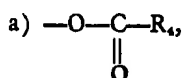
and (I)



in which:

- 40 R_1 represents a linear or branched saturated hydrocarbon radical with up to 19 carbon atoms,

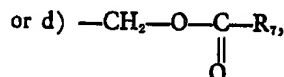
R_2 represents:



wherein R_4 is as defined under R_1 but is different from R_1 ,

b) $\text{—CH}_2\text{—R}_5$, wherein R_5 represents a linear or branched saturated hydrocarbon radical with 5 to 25 carbon atoms,

c) —O—R_6 , wherein R_6 represents a saturated hydrocarbon radical with 2 to 18 carbon atoms,



wherein R_7 represents a linear or branched saturated hydrocarbon radical with up to 19 carbon atoms,

and R_3 represents a hydrogen atom when R_2 represents a radical as defined under a), b) or c), or R_3 represents a hydrogen atom or a methyl radical when R_2 represents a radical as defined under d), with the proviso that at least 15% by weight of the copolymer consists of a monomer of formula (1a) or (1b) which contains a linear or branched saturated hydrocarbon radical of at least 7 carbon atoms.

2. A composition according to claim 1, in which the cosmetic fatty constituent is present in an amount from 65 to 98%, and the copolymer is present in an amount from 35 to 2%, by weight, based on the total weight of the composition.

3. A composition according to claim 2 in which the cosmetic fatty constituent is present in an amount from 75 to 95% by weight, based on the total weight of the composition.

4. A composition according to any one of claims 1 to 3 in which the cosmetic fatty constituent consists of 6 to 100% by weight of at least one wax and 0 to 94% by weight of at least one oil.

5. A composition according to claim 4 in which the wax is at least one of ozokerite, lanolin, lanolin alcohol, hydrogenated lanolin, acetylated lanolin, lanolin wax, beeswax, Candelilla wax, microcrystalline wax, Carnauba wax, cetyl alcohol, stearyl alcohol, spermaceti, cacao butter, a lanolin fatty acid, petrolatum, a mono, di- or triglyceride which is solid at 25°C., a fatty ester which is solid at 25°C., a silicone wax, stearyl monoethanolamide, colophony, a glycol abietate, a glycerol abietate, a hydrogenated oil which is solid at 25°C., a sucro-glyceride, or a Ca, Mf, Zr or Al oleate, myristate, lanolate, stearate or dihydroxy-stearate.

6. A composition according to claim 4 or 5

in which the oil is at least one of paraffin oil, Purcellin oil, perhydrosqualene, sweet almond oil, avocado oil, calophyllum oil, castor oil, caballine oil, lard oil, olive oil, a mineral oil with a boiling point of 310° to 410°C., a silicone oil, linoleyl alcohol, linolenyl alcohol, oleyl alcohol, cereal germ oil, isopropyl lanolate, isopropyl palmitate, isopropyl myristate, butyl myristate, cetyl myristate, hexadecyl stearate, butyl stearate, decyl oleate, an acetyl-glyceride, an octanoate or decanoate of an alcohol or polyalcohol, a ricinoleate of an alcohol or polyalcohol, isostearyl alcohol, isocetyl lanolate, isopropyl adipate, hexyl laurate or octyl-dodecanol.

7. A composition according to any one of the preceding claims in which the units of formula (Ia), and/or of formula (Ib) in which R_2 represents the radical

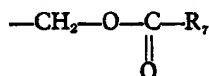


are derived from vinyl acetate, vinyl propionate, vinyl butanoate, vinyl octanoate, vinyl decanoate, vinyl laurate, vinyl stearate or vinyl isostearate.

8. A composition according to any one of claims 1 to 6 in which the units of formula (Ib) in which R_2 represents the radical $\text{---CH}_2\text{---R}_2$ are derived from 1-octene, 1-dodecene, 1-octadecene or 1-eicosene or a mixture of α -olefines with 22 to 28 carbon atoms.

9. A composition according to any one of claims 1 to 6 in which the units of formula (Ib) in which R_2 represents the radical ---O---R_2 are derived from ethyl vinyl ether, n-butyl vinyl ether, isobutyl vinyl ether, decyl vinyl ether, dodecyl vinyl ether, cetyl vinyl ether or octadecyl vinyl ether.

10. A composition according to any one of claims 1 to 6 in which the units of formula (Ib) in which R_2 represents the radical



are derived from allyl or methallyl acetate, propionate, butyrate, hexanoate, octanoate, decanoate, laurate, stearate or eicosanoate.

11. A composition according to any one of claims 1 to 6 and 8 to 10 in which the copolymer consists of 50 to 95 mol % of at least one unit of formula (Ia) and 50 to 5 mol % of at least one unit of formula (Ib) in which R_2 represents a radical as defined under b), c) or d).

12. A composition according to any one of claims 1 to 7, in which the copolymer consists of 10 to 90 mol % of at least one unit of formula (Ia) and 90 to 10 mol % of at least

one unit of formula (Ib) in which R_2 is as defined under a).

13. A composition according to any one of the preceding claims in which the copolymer is crosslinked.

14. A composition according to claim 13 in which the copolymer is crosslinked by tetra-allyloxyethane, divinylbenzene, divinyl octanedioate, divinyl dodecanedioate or divinyl octadecanedioate.

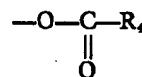
15. A composition according to any one of the preceding claims in which the copolymer has a molecular weight of from 2,000 to 500,000.

16. A composition according to claim 15 in which the copolymer has a molecular weight from 4,000 to 200,000.

17. A composition according to any one of the preceding claims in which at least 30% by weight of the copolymer consists of a monomer of formula (Ia) or (Ib) which contains a linear or branched saturated hydrocarbon radical of at least 7 carbon atoms.

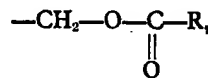
18. A composition according to any one of claims 1 to 16 in which at least 40% by weight of the copolymer consists of a monomer of formula (Ia) or (Ib) which contains a linear or branched saturated hydrocarbon radical of at least 7 carbon atoms.

19. A composition according to any one of claims 1 to 6 and 12 to 18 in which the units of formula (Ia) and/or formula (Ib) in which R_2 represents the radical



are derived from vinyl 2,2-dimethyloctanoate, vinyl dimethylpropionate or vinyl esters of ceka-noic acids (as hereinbefore defined).

20. A composition according to any one of claims 1 to 6, 11 and 13 to 18 in which the units of formula (Ib) in which R_2 represents the radical



are derived from allyl or methallyl dimethyl-propionate or 2,2-dimethylpentanoate.

21. A composition according to claim 1 substantially as hereinbefore described.

22. A solid or semi-solid composition suitable for use as a cosmetic which comprises a fatty composition as claimed in any one of the preceding claims.

23. A composition according to claim 22 which is in the form of a stick and contains from 75 to 99.5% by weight, based on the total weight of the cosmetic composition, of the fatty composition.

24. A composition according to claim 22 which is in the form of a paste and contains from 75 to 99.5% by weight, based on the weight of the cosmetic composition, of the fatty composition, the amount of wax in the fatty composition not exceeding 85% by weight based on the total weight of the fatty composition.

25. A composition according to any one of claims 22 to 24 which is anhydrous.

26. A composition according to any one of claims 22 to 24 which contains up to 10% by weight based on the total weight of the cosmetic composition, of water.

27. A composition according to claim 22 which is in the form of a semi-solid mascara, is anhydrous and contains 35 to 50% by weight of a volatile product (as hereinbefore defined) based on the total weight of the composition.

28. A composition according to claim 22 which is in the form of a semi-solid mascara and contains 50 to 70% by weight of water and 8 to 20% by weight of an emulsifier, based on the total weight of the cosmetic composition.

29. A composition according to any one of claims 22 to 28 which also contains at least one of a dyestuff which is soluble or insoluble in the continuous medium, an agent which imparts a pearly lustre, a perfume, an anti-sunburn agent, an anti-oxidant and/or a preservative.

30. A composition according to any one of

claims 22 to 29 which comprises a fatty composition as claimed in claim 18.

31. A composition according to any one of claims 22 and 25 to 30, in which the fatty composition is present in an amount from 99.5% to 15% by weight, based on the total weight of the cosmetic composition, the copolymer being present in an amount of at least 1.5% by weight, based on the total weight of the cosmetic composition.

32. A composition according to claim 23 or 24 in which the copolymer is present in an amount of at least 1.5% by weight, based on the weight of the cosmetic composition.

33. A composition according to any one of claims 22 and 27 to 31 which is in the form of a semi-solid mascara and contains 15 to 40% by weight, based on the total weight of the composition, of the fatty composition.

34. A composition according to claim 22 substantially as hereinbefore described.

35. A composition according to claim 22 substantially as described in any one of Examples II, V to XIII, XV, XVI and XIX to XXI.

36. A composition according to claim 30 substantially as described in any one of Examples I, III, IV, XIV, XVII and XVIII.

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